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| EXAMINER |
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KASSA, TIGABU

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1619

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09/23/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                         |  |
|------------------------------|--------------------------------------|-----------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/527,671 | <b>Applicant(s)</b><br>NAKANISHI ET AL. |  |
|                              | <b>Examiner</b><br>TIGABU KASSA      | <b>Art Unit</b><br>1619                 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 14 August 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2,4,7-34 and 36 is/are pending in the application.
- 4a) Of the above claim(s) 7-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,4 and 36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

This Office Action is in response to the amendment filed August 19, 2008.

**Claims 2, 4, 7-34, and 36 are currently pending. Claims 2, 4, and 36 are under consideration in the instant office action.** Claims 7-34 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claims. Claims 1, 3, 5-6, and 35 are cancelled.

***Request for continued examination***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/14/09 has been entered.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically taught or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under

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37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness

**Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Shioya et al. (US Patent No 5,144,054) in view of Sakuta (WO01/92375) using the equivalent US Patent No. 6747115 for translation.**

#### *Applicant Claims*

Instant claim 2 recites an organopolysiloxane polymer having a glycerol derivative which can swell up by containing at least its own weight of liquid oil and which has a three dimensional cross-linked structure. Applicant has elected the following species originally for a2 and b1: the organopolysiloxane polymer obtained by the addition polymerization of the organohydrogen polysiloxane (a2)  $M_2D_{40}D^H_2$  and as the glycerol derivative (b1) polyglycerol diallylether. The examiner has expanded the species to 10-undecenylglyceryl ether, which is described by Shioya et al. (column 23, line 54, example 10).

#### ***Determination of the Scope and Content of the Prior Art (MPEP §2141.01)***

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Shioya et al. teach novel siloxane derivatives having surface active action useful as an emulsifier capable of excellent emulsification stability and having good fitness, good slip, **good cosmetic adhesiveness**, and good usage feeling (column 2, lines 6-12). Shioya et al. teach an organopolysiloxane polymer having a glycerol derivative (column 23, example 10, lines 50-53), which addresses the limitations of instant claim 2, specifically the variables recited in instant claim 2, for (a2) where  $1.0 \leq d \leq 2.3$ ,  $0.001 \leq e \leq 1.0$  and  $R^1$  is a substituted or unsubstituted monovalent hydrocarbon group having 1-30 carbon atoms, furthermore, for (b1) where f is an integer from 2-10 and  $R^3$  is an alkenyl group having 2-20 carbon atoms have been addressed by the teachings of Shioya et al.

***Ascertainment of the Difference Between Scope the Prior Art and the Claims  
(MPEP §2141.012)***

Shioya et al. do not teach the polymer as having a three dimensional cross-linked structure. This deficiency is cured by Sakuta.

Sakuta teaches a silicone polymer that is insoluble in organic solvents due to its **three dimensional cross-linked structure** which swells up relative to fluorsilicone oils (abstract). The polymer includes **an organohydrogen polysiloxane of formula a2 which is the same as the instantly selected species a2** (column 2, line 30).

***Finding of Prima Facie Obviousness Rationale and Motivation  
(MPEP §2142-2143)***

It would have been prima facie obvious to the ordinarily skilled artisan to crosslink the organopolysiloxane of Shioya et al. because Sakuta teach the cross-linking of silicone polymers (abstract). The skilled artisan would have been motivated to crosslink the polymer **so as to achieve excellent water and oil repellence wherein the**

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**polymer swells relative to the oils** (Sakuta, column 2, lines 10-14 and lines 5-7) and thereby achieve a more stable, functional cosmetic composition. The skilled artisan would have a reasonable expectation of success because cross-linking polymers, including polyorganosiloxanes, are well known in the art as evidenced by Sakuta. Moreover, the polymers taught by Sakuta and Shioya et al. are similar polymers which both contain the instantly selected species a2.

In light of the forgoing discussion, one of ordinary skill in the art would have concluded that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

Therefore, the invention would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

**Claims 2, 4, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shioya et al. (US Patent No 5,144,054) in view of Sakuta (WO01/92375) and Harai et al. (European Patent Specification 0350951, IDS reference).**

#### ***Applicant Claims***

The claimed subject matters of instant claim 2 are set forth above. Instant claim 4 recites in the organopolysiloxane polymer the glycerol derivative as per applicant's species election (b1) is a polyglycerol diallylether of the structure provided in the instant claim where s is an integer from 1-20. Instant claim 36 recites the organopolysiloxane polymer according to claim 2, wherein b1 is one of the formulas listed in the claim.

#### ***Determination of the Scope and Content of the Prior Art (MPEP §2141.01)***

The teachings of Shioya et al. and Sakuta have been set forth above in the instant office action and are herein incorporated by reference.

Harai et al. teach a silicone rubber adhesive comprising a silicone rubber composition comprising an organohydrogen polysiloxane component (page 3, line 6) and a partial allyl ether of a multivalent of alcohol component which functions to impart tack (adhesiveness) to the uncured adhesive, and with other components of the composition to improve the durability of adhesion for various substrates (page 4, lines 6-9). Harai et al. teach an example of polyglycerol diallylether **diglycerol diallyl ether** (page 4, line 13).

***Ascertainment of the Difference Between Scope the Prior Art and the Claims  
(MPEP §2141.012)***

Shioya et al. and Sakuta lack the teaching of the glycerol derivative polyglycerol diallylether. This deficiency is cured by the teachings of Harai et al.

***Finding of Prima Facie Obviousness Rational and Motivation  
(MPEP §2142-2143)***

It would have been prima facie obvious to the ordinarily skilled artisan to crosslink the organopolysiloxane of Shioya et al. because Sakuta teach the cross-linking of silicone polymers. The skilled artisan would have been motivated to crosslink the polymer so as to achieve excellent water and oil repellence wherein the polymer swells relative to the oils and thereby achieve a more stable, functional cosmetic composition. The skilled artisan would have a reasonable expectation of success because cross-linking polymers, including polyorganosiloxanes, are well known in the art as evidenced by Sakuta. Moreover, the polymers taught by Sakuta and Shioya et al. are similar polymers which both contain the instantly selected species a2.

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It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Shioya et al. and Harai et al., because Harai et al. teach that in a composition comprising organohydrogen polysiloxane component (page 3, line 6) the incorporation of a partial allyl ether such as **diglycerol diallyl ether** (page 4, line 13) of a multivalent of alcohol component functions impart tack (adhesiveness) to the uncured adhesive and with other components of the composition improves the durability of adhesion for various substrates (page 4, lines 6-9). The skilled artisan would be motivated to combine the teachings, because imparting tack (adhesiveness) to the organohydrogen polysiloxane allows these polymers to be useful emulsifiers with excellent emulsification stability with good cosmetic adhesiveness. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Shioya et al. and Harai et al., because it is desirable to utilize for example **diglycerol diallyl ether** which has two available double bonds for polymerization, since one of the double bond can cross-link to the organohydrogen siloxane polymer and the other one would be available for further cross-linking and polymerization. A skilled artisan would have had a reasonable expectation of success upon combination of the prior art teachings, because both of the teachings comprise a similar organohydrogen siloxane polymer and glycerol derivative components. Furthermore, both teachings strive for a better organohydrogen siloxane polymer with excellent adhesiveness for various purposes.

In light of the forgoing discussion, one of ordinary skill in the art would have concluded that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

Therefore, the invention would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

***Response to arguments***

Applicant's arguments filed 08/14/09 have been fully considered but they are not persuasive. Applicant argues that Shioya et al do not teach the organopolysiloxane polymer in three-dimensional cross-linked form. Additionally, applicant argued that from the glyceryl group taught by Shioya et al. only one terminal is combined with a Si atom of the polysiloxane by means of the bivalent hydrocarbon group resulting in the glycerol compound having an unsaturated bond at only one molecular end should be used in order to synthesize the component.

This is not persuasive because applicant has resorted to attacking the references individually while the rejection is in combination of Shioya et al. and Sakuta. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The examiner has clearly stated in the previous office action that the missing element from the teachings of Shioya et al. is, Shioya et al. do not teach the polymer as having a three dimensional cross-linked structure. However, this deficiency is cured by the teachings of Sakuta. Furthermore, it is not clear what applicant is trying to argue in page 10, paragraph 3 of the response during mentioning the teachings of Sakuta. The examiner interpreted

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this paragraph as applicant is arguing that Sakuta even if it teaches organopolysiloxane polymer having three-dimensional cross-linking structure, the cross-linking is accomplished using alkylene-containing polyoxyalkylene instead of the glycerol moiety. This is not found persuasive because the incorporation of the glycerol moiety is clearly taught by the primary reference Shioya et al. On the other hand, Sakuta is incorporated in the reference to clearly show that cross-linking organopolysiloxanes is a commonly known procedure conventionally performed by one of ordinary skill in the art and it has advantages such as excellent water and oil repellence wherein the polymer swells relative to the oils and thereby achieve a more stable, functional cosmetic composition. Sakuta does not have to teach the incorporation of the glycerol moiety because that limitation is clearly taught by Shioya et al.. Furthermore, the polymer structure taught by Shioya et al. reveals that the free hydroxyl groups available on the glycerol moiety can undergo further cross-linking reactions.

Applicants argument further hinge on the unexpected advantages presented in table 2, page 2 of the specification. Applicants assert that compositions in examples 11 and 12 which contain polyglycerol-modified silicone have shown very good moistness after use and long term moistness than cross-linked polyether-modified silicone containing composition.

Although the examiner acknowledges that applicant's qualitative data indicates that the composition of examples 11-12 were relatively having very good moistness after use and long term moistness in general, the examiner respectfully disagrees with applicant's assertion that this is due to the incorporation of cross-linked polyglycerol derivative. On the contrary applicant really also proved that a composition containing

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polyglycerol-modified silicone just exactly the same as Shioya et al. also exhibited very good moistness after use and long term moistness in general (example 12). Example 12 shows the incorporation of uncross-linked polyglycerol-modified silicone which is exactly the same as the polymer taught by Shioya et al., which is a species of polyglycerol-modified silicone. Applicant as distinctly differentiate between cross-linked polyether-modified silicone and polyether-modified silicone, applicant clearly states that in example 12 the polymer is polyglycerol-modified silicone it does not state cross-linked polyglycerol-modified silicone. Furthermore, the results provided in the specification have been reviewed and are not considered to be unexpected results because the data submitted comparing the assessment of Examples 11-12 and comparative examples 1-2 contains a comparison of the moistness and long-term moistness. Simply stating that Examples 11-12 result in a very good moistness and long-term-moistness does not provide sufficient weight to overcome the instant rejection. The assessment is subjective and lacks a reasonable level of scientific objectivity.

Applicant also argued that there is no motivation to combine Harai et al. with Shioya et al. and Sakuta. The examiner respectfully disagrees with this assertion because Harai et al. teach that in a composition comprising organohydrogen polysiloxane component (page 3, line 6) the incorporation of a partial allyl ether such as **diglycerol diallyl ether** (page 4, line 13) of a multivalent of alcohol component functions impart tack (adhesiveness) to the uncured adhesive and with other components of the composition improves the durability of adhesion for various substrates (page 4, lines 6-9). The skilled artisan would be motivated to combine the teachings, because imparting tack (adhesiveness) to the organohydrogen polysiloxane allows these polymers to be

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useful emulsifiers with excellent emulsification stability with good cosmetic adhesiveness. It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Shioya et al. and Harai et al., because it is desirable to utilize for example **diglycerol diallyl ether** which has two available double bonds for polymerization, since one of the double bond can cross-link to the organohydrogen siloxane polymer and the other one would be available for further cross-linking and polymerization. A skilled artisan would have had a reasonable expectation of success upon combination of the prior art teachings, because both of the teachings comprise a similar organohydrogen siloxane polymer and glycerol derivative components. Furthermore, both teachings strive for a better organohydrogen siloxane polymer with excellent adhesiveness for various purposes.

In light of the forgoing discussion, one of ordinary skill in the art would have concluded that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

Therefore, the invention would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

### **Conclusion**

Claims 2, 4, and 36 are rejected, while claims 7-34 are withdrawn. Claims 1, 3, 5-6, and 35 are cancelled. No claims are allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIGABU KASSA whose telephone number is (571)270-5867. The examiner can normally be reached on 9 am-5 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tigabu Kassa

9/17/09

*/Mina Haghighatian/*  
Primary Examiner, Art Unit 1616